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Protecting Biological Diversity in Madagascar

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Summary

Madagascar's forests are severely threatened, and with them a rich array of plant and animal life unique to this island country. Some 2,000 years ago the first known human visitors to Madagascar found a land largely covered with forests. Today only about 20 percent of that habitat remains. Most of that loss has taken place in the last 50 years.

In recent years the Malagasy government has come to appreciate the high stakes associated with forest resource degradation and destruction. Eighty-five percent of the work force is engaged in agriculture, and agriculture (which earns 80 percent of the country's foreign exchange) depends on the water-regulating capacities of healthy forests. Moreover, Madagascar's rich biological diversity offers significant potential for developing an ecotourism industry. That diversity has also made important contributions to pharmaceutical drugs in mankind's battle against major disease—leukemia, to name just one.

USAID's biodiversity protection and forest management program in Madagascar is the Agency's largest. The Agency's assistance began in the mid-1980s. It is based on the hypothesis that conservation and development can go hand in hand if local populations see a benefit in adopting—and are empowered to carry out—protective practices.

Early USAID support involved two mechanisms. First was a $1 million debt-for-nature swap, which funds a nationwide cadre of locally recruited nature protection agents. The second mechanism was support, through a series of program grants, to nongovernmental organizations (NGOs) to carry out conservation and development activities at some of the country's 39 protected areas. These activities led to a $42 million project combining institutional strengthening with a second round of NGO grants in support of Madagascar's protected-areas program.

In late 1993 a team from USAID's Center for Development Information and Evaluation (CDIE) spent 4 weeks in Madagascar to assess the Agency's first generation of integrated conservation and development projects. It examined USAID support at both the national and local level but concentrated on a single protected-area field site.

On the positive side, the evaluators found that USAID has helped change the way Madagascar approaches the management of its protected areas. The country has gone from a strict preservationist approach, which did not work, to one that more effectively combines conservation

and development. For example, local people are becoming aware of the importance, to themselves, of preserving forests and wildlife. Some people have modified their behavior, as is shown by a reduction of herding and trapping within protected areas. The presence of 380 nature protection agents has also helped slow the rate of destruction of forest ecosystems.

These changes have come about through USAID's support for ANGAP, the National Association for the Management of Protected Areas. ANGAP is a quasi-nongovernmental body that delegates responsibility for running protected areas to individual "operators"—mostly international NGOs at this stage.

On the downside, the evaluators found general weakness in the strategies linking biodiversity protection to development in peripheral buffer zones. Development activities tend to be sporadic and haphazard, and until recently they followed no logical path to conservation. They have so far produced almost no measurable results.

Also weak are linkages between international and local NGOs. The Madagascar program's long-term success ultimately depends on the local NGOs, yet only a few are capable of working in real partnership with international groups. It took USAID some time to recognize the capacity shortcomings of local NGOs. As a result, little systematic work was done to prepare them to carry on conservation work after the international groups leave. (Aware of the problem, international NGOs are now trying to bolster their teamwork with local NGOs.)

Among the conclusions the team drew are these:

The international NGOs that operate most protected areas need more autonomy, and more freedom to experiment with conservation strategies.

Local populations need to become more involved in the design of integrated conservation and development projects. That is especially true where environmentally positive alternative livelihood activities are being proposed for local adoption.

USAID needs to beef up its training of local NGOs in organization, communications, and conservation skills.

Background

The world's fourth largest island, Madagascar is virtually a continent unto itself. Beginning perhaps 165 million years ago, tectonic movement wrenched Madagascar loose from the African landmass, then carried it 250 miles into the Indian Ocean. The island's flora and fauna evolved in isolation. The result: About 80 percent of its plant life and more than 90 percent of its animal species are found nowhere else on earth.

Moreover, the plant and animal species vary greatly from one region to another. Not surprisingly, scientists regard Madagascar as a trove of biological diversity. "Each forest is a pearl without

price," says an American naturalist who has worked in Madagascar for more than three decades. "And each forest is as precious as the others: One cannot be substituted for another."

Made a French protectorate in 1885, Madagascar gained independence in 1960. A succession of authoritarian governments left their mark on the environment. Early regimes followed a policy of policing the forests without involving the people. In time, though, absolute conservation came to be seen as antidevelopment and as an undesirable vestige of colonialism. From 1975 to 1990, active management of Madagascar's forest ecosystems was all but abandoned.

Attitudes began to change again, however, in the mid-1980s as the government (with encouragement from the world community) came to appreciate the value of the resources at stake. But by the time conservation plans could be put in action, the forest ecosystems had sustained critical damage through expansion of traditional farm production systems. Experts estimate that 80 to 85 percent of the forest cover has been lost.

That leaves Madagascar's remaining biological treasure gravely threatened. The Malagasy, now enjoying a multiparty democracy, face a major challenge. Helped by aid organizations, they must find a way to preserve remaining forest habitats and integrate them, in a sustainable way, into the surrounding cultural milieu. That is, they must link conservation with development.

The stakes are immeasurable. Agriculture, which depends on the water-regulating capacities of many protected forests, employs 85 percent of the work force. It accounts for 35 percent of gross domestic product and brings in 80 percent of foreign earnings.

Moreover, the island's scenic beauty, combined with the rich culture of the Malagasy people, offers great long-term potential for nature tourism. Already the number of foreign visitors has grown from 12,000 in 1984 to 40,000 in 1990, a jump attributable largely to ecotourism. Yet this industry currently represents only 1 percent of gross national product. There is plenty of room for growth—if (among other things) Madagascar's protected habitats can be preserved.

USAID's Assistance Approach

In helping Madagascar preserve its rich natural heritage, USAID is testing a hypothesis. It is that local populations will change their destructive behavior if they are sufficiently empowered and if they see a linkage between conservation and their social and economic well-being. USAID seeks to achieve conservation through development of the peripheral zones surrounding protected areas.

Toward this integrated conservation and development approach, the Agency has obligated around $100 million. Assistance began in the mid-1980s with a relatively low level of funding. The bulk of USAID's assistance—more than $80 million—is targeted for the 1990s. (Madagascar receives more USAID assistance for biodiversity conservation than any other country.)

The National Environment Action Plan provides the framework for USAID's assistance. Approved in 1990, the plan grew out of a 1985 international conference called by the Government of Madagascar to reorient the country's environmental policies and to encourage outside donor involvement. The action plan emphasizes a program to improve the management of protected areas. It involves delegating responsibilities in day-to-day coordination of the Protected Areas Program to ANGAP. A quasi-nongovernmental body, ANGAP in turn devolves to a series of public and private member "operators" the hands-on task of conserving protected areas and developing the peripheral zones. The operators are mainly international conservation and development NGOs.

Earlier foundations for this comprehensive USAID support involved two main mechanisms. First was a debt-for-nature swap. Administered by an American environmental NGO, World Wildlife Fund, the initial $1 million grant reduced Madagascar's foreign debt by $2.1 million and was used to establish an endowment. Interest from the endowment supports reforestation activities and funds a cadre of 380 nature protection agents. They are modestly educated village-level forestry extension workers whose mission is to raise people's awareness of environmental concerns. The agents also do a significant amount of patrolling against illegal protected-area encroachment.

The second mechanism was support for what evolved into Madagascar's Protected Areas Program. USAID support consisted of conservation-through-development grants to five protected-area sites. The grants provided for multiyear projects with activities in (1) inventory and conservation of biological resources for a given site, (2) rural development aimed at surrounding populations, (3) strengthening park management, and (4) conservation education. (Individual projects also fund village conservation agents.)

CDIE's study focused on one protected area, the Andohahela Integral Nature Reserve. The evaluation concluded that many of the site-specific outcomes, issues, and lessons observed at Andohahela could be applied more broadly in Madagascar and elsewhere. USAID's Madagascar conservation activities have been rolled into one comprehensive $42 million program, Sustainable Approaches to Viable Environmental Management (SAVEM). A sister policy program, Knowledge and Effective Policies for Environmental Management ($40 million), was just getting under way at the time of CDIE's evaluation.

In supporting the Protected Areas Program, USAID reserves a predominant role for international and indigenous NGOs. The large international NGOs that receive grants for integrated projects are expected to develop some form of partnership with local NGOs and build their capacity to work on such projects. USAID has supported NGOs through (1) direct grants (to international NGOs), (2) a grants management unit under SAVEM, (3) development of team relationships between principal operators and other NGOs, and (4) institutional support to encourage networking among local environmental NGOs.

NGO networking has been promoted through a USAID/ Washington seed grant of $200,000. The grant has helped develop a consortium of indigenous NGOs, the Malagasy Council for Development and the Environment. The council has five staff members and 27 member NGOs throughout the country. The seed grant money helped the council define its three-part program

of (1) training NGO staff, (2) exchanging information among NGOs, and (3) serving as spokesman for indigenous NGOs.

Despite the difficulties inherent in forming a consortium of highly independent NGOs, and despite divisions within the NGO community itself, the council has made progress in realizing its mission. It has funded six training workshops for NGOs—two in each of three regions (the north, center, and south). The workshops have covered themes ranging from project planning to technical issues in response to NGO concerns.

The council is also involved in defining the legal status of NGOs. The process includes devising a more rigorous registration system for indigenous organizations. As they stand (according to the council and international and national NGO staff), registration procedures are too lax. That circumstance has resulted in a large number of paper NGOs with no real mission or expertise.

Findings

Madagascar began its efforts in biodiversity protection following 15 years of centralized, authoritarian rule and progressively weak resource management. Given that, the results so far, though modest, are nonetheless impressive.

Program Impact

USAID has, at the national level, helped bring about significant institutional and policy change. The Agency, for example, played a central role in launching ANGAP, which uses an integrated approach—conservation together with development—in place of the old policy of strict preservation. That policy (enforced or not) did not work. Through the integrated approach, USAID hopes to help make conservation a viable proposition for biodiversity and the Malagasy people.

ANGAP's staff of more than 30 consists largely of former government employees from the Department of Water and Forests. Despite its government ties, however, ANGAP has evolved into an increasingly autonomous institution. It has held workshops, conducted field visits, and drawn up training plans to reinforce activities in and around protected areas. Drawing on experience in Madagascar and elsewhere, it has developed a set of guidelines, which it uses to coordinate with individual operators.

Although ANGAP had reached a desirable degree of autonomy at the time of the evaluation, the operators it oversees had not. Operators felt that the way the association went about applying the guidelines resembled control more closely than coordination. For example, ANGAP required operators to follow what the operators regarded as overly standardized procedures in the design, execution, and evaluation of protected-areas projects. The operators maintained that each area is unique and that projects should be developed independently.

Local populations are aware of the Andohahela conservation and development project. They have begun to understand some basic environmental linkages and have modified their behavior, at least in part, depending on the availability of alternative practices. There are signs that the presence of nature protection agents in particular has helped slow the rate of forest destruction in the Andohahela Reserve.

Similar changes were occurring elsewhere. Interviews with villagers indicated they clearly understand that reserves are off-limits. The team observed a reduction, within the reserve, of such activities as herding and trapping.

Resources within the reserves have noticeably (if not quantifiably) improved. With some limited exceptions, protected areas of forested lands have been stabilized. Boundary lines are clearly established, and firebreaks are being completed. The team saw overgrown paths and abandoned trap lines. At least one mining operation has been abandoned. According to villagers and project personnel, timbering has greatly diminished within the reserve, although honey hunters continue to fell trees.

The debt-for-nature swap produced direct economic benefits for the country, but the overall impact on balance of payments was insubstantial. The $2.1 million reduction in Madagascar's foreign debt represents only a minute percentage of the national total of around $4.5 billion. Its fiscal impact is negligible. The program does, however, employ some 400 individuals, and the net effect of their efforts is better forest protection. The swap thus has positive long-term impact.

Program Efficiency

Development activities in the peripheral zones have not yet been substantial enough to warrant an analysis of program efficiency. Strategies linking economic development in the periphery to conservation of the reserve have been weak. That is, they often have had no noticeable effect in reducing human pressures on a reserve. Leaving aside the missing link to conservation, these activities have not otherwise produced benefits in economic development that could by themselves justify USAID's sizable investment.

That said, however, it must be pointed out that no one knows exactly what data would be needed to gauge program efficiency. How (to mention one imponderable) can the survival of a species be valued? In a case like Madagascar, new methods of measuring program efficiency are called for. For now, it can be stated that the value of Madagascar's natural heritage is reflected in the willingness of donors and others to pay the costs of conservation. It is reflected as well in the willingness of the government to support the effort by dedicating a large proportion of public revenues and planning effort to it.

Program Effectiveness

The current program covers only a limited number of Madagascar's protected areas and none of the remaining unprotected natural areas. According to ANGAP, the 14 "priority 1" protected

areas—those in most urgent need of protection—are or will soon be under operator-managed integrated projects. Proposals for priority 2 and 3 areas are in the formative stages. Even if each integrated project is successful, many important areas of prime habitat will be lost. Protected areas account for only 10 percent of Madagascar's remaining forest, or about 2 percent of the total land area.

The hypothesis that conservation and development can coexist by improving livelihoods remains, as yet, unproven. Even if it is proven, concentration on a limited number of protected areas may produce local and even regional inequities. A tendency to concentrate the benefits could be offset by proactive strategies. Along this line, ANGAP is considering apportioning ecotourism revenues earned by protected areas to areas with little potential for tourism.

Equitable distribution of benefits to populations supporting protected-area policies has proven difficult to achieve. Early attempts at development around protected areas consisted principally of gift-giving. Having little understanding of village social and organizational structures, development organizations "parachuted" interventions into villages. In some cases that has created divisions and ill will within villages or misunderstandings between villagers and project staff.

Moreover, villagers have come to expect gifts (dams, schools, nurseries, roads, and carts) in return for protecting (not destroying) forested areas. However, a gift-giving approach does not lead to sustainable conservation activities. A fine line, however, separates gift-giving and well-planned development projects. The latter, stressing incentives for reciprocity rather than stressing reward, *can* help promote sustainable conservation.

Program Sustainability and Replicability

By providing a continuing and predictable source of funds, the Department of Water and Forest's debt-for-nature program used endowment income to enhance institutional commitment. The debt-for-nature agreement, the first in the African region, differs substantially from previous debt swaps throughout the world. In the past, interest generated by a debt swap had to be reimbursed to the U.S. Government. A change in U.S. law, however, allowed local-currency funds from debt swaps to be invested and the interest used for project activities. In other words, the program's original intent (providing stopgap support while identifying more sustainable means) has taken on longer-term significance. The debt-for-nature program is able to run most of its activities from accrued interest alone. As a result, support to the Department of Water and Forests through this program will be maintained for a longer time than was initially expected.

Although the debt swap is not a panacea, its success has encouraged additional similar arrangements. The debt-for-nature program has been integrated into the formal organization of the Department of Water and Forests. USAID's investment in organization and management systems provides a channel for additional debt-swap funds. For example, in 1991 the World Wildlife Fund added $500,000 to USAID's original grant.

Generally, international groups are not working in equal partnership with indigenous NGOs and are therefore not ensuring the continuity of operations in the long term. Only two or three

Malagasy NGOs are capable of working as even junior partners with international NGOs on integrated conservation and development projects. Moreover, with few exceptions, local NGOs do not yet have the capacity to serve as operators of such projects.

Development of local NGO capacity by project personnel and international NGOs has been unsystematic and not always useful. Most of the well-established indigenous NGOs work in the agricultural areas of the Haute-Plateau. They are at a loss when habitat preservation on the lower slopes is the development objective. Several have succeeded in rural development, including village organization and natural resources management. But they do not necessarily have the means or desire to move into the more remote locales of most protected areas.

Overall, problems in international–local NGO teamwork may be reduced in the future. International NGOs simply were ill prepared for capacity building. That shortfall is now recognized as a problem in its own right and is being addressed.

The potential of ecotourism to enhance financial sustainability has required a longer lead time than expected. Initial planning documents placed great hopes on ecotourism as a vehicle for ensuring biodiversity conservation. The initial draft of the National Environmental Action Plan discussed at some length the development of ecotourism and some of the investments that would need to be financed to realize its potential. Almost 5 years later, that potential is still far from realized (although, as noted earlier, tourism has grown).

The infrastructure obstacles to increasing tourism are daunting. Transportation (both international and domestic), communications, and lodging and other tourist services are all inadequate. Such problems, though, are beyond the scope of protected-area operators. They can be resolved only by the national government working with international donors and the private sector.

Structures are being set up to put existing tourism to work for biodiversity protection. ANGAP in mid-1992 started selling permits for entrance into parks and reserves. Half the proceeds will be distributed through the operators to communities around the protected areas. Revenues from January through March 1993 totaled $9,300. More than 50 percent of the visitors were Malagasy. To better serve visitors, operators and ANGAP conduct guide training programs and are upgrading facilities in and around parks.

Madagascar derives important benefits from recruiting many of its nature protection agents from their villages. In principle, agents are villagers themselves and not outsiders. They can encourage their fellow villagers to follow their example and protect the park or reserve of their own accord. Protecting the area becomes a matter of self-restraint, not of imposed control and enforcement by outside agents. In order to realize these benefits, projects may have to accept a lower level of education in recruiting from some remote villages.

Lessons Learned

Protected-area management requires latitude for experimentation; there must be reasonable coordination and control, but not to the extent that operators are blocked from testing their own approaches. The need for systemwide coordination and oversight is generally recognized, but the ability to test hypotheses requires a certain degree of autonomy on the part of operators. Conversely, as a part of an overall trend toward decentralization, operators must build strong local commitment and institutional linkages.

ANGAP provides an instructive example. The association itself has become increasingly autonomous. As an association, though, it should provide a forum in which all members' perspectives are represented. That has not yet happened. Operators have shown little sense of ownership in ANGAP. The issue of autonomy is critical. If operators are to be responsible not only for protected-area management but also for a variety of other activities, they must have sufficient freedom in choosing their staff and advisers. That extends to freedom in developing their approach to conservation. Despite ongoing efforts, ANGAP had not yet achieved that balance between coordination and control.

For peripheral zone development to be successful, local stakeholders must be incorporated into project design and planning. Technical inputs need to be well thought out and well explained to villagers. Early attempts at rural development activities around protected areas have been more important for the lessons learned than for their actual positive impacts. Inexperience of conservation NGOs with development activity and the sense of urgency to do something produced ineffective technical interventions. In the best cases these interventions helped raise awareness; in the worst they were counterproductive. USAID and other donors need to make sure that conservation and development strategies are firmly linked—and that the links are apparent to all concerned.

Strong local NGOs are essential to sustaining biodiversity protection. USAID needs to examine its current approach to NGO capacity building and develop coherent, effective, and supportive training procedures. Involvement of international NGOs that concentrate on NGO capacity building but do not currently operate in the country would permit training for local NGOs. Current operators do not specialize in NGO development. They would benefit from assistance from organizations that do.

Locally recruited agents provide a cost-effective means of bringing about effective conservation and development programs. The deterioration or absence of field-based forest protection and management, prevalent during 1975–90, is being offset by the cadre of nature protection agents. The agents are increasing villagers' awareness and knowledge of environmental issues. They are also helping reduce incursions into and destruction of parks and reserves. Because the agents are recruited at the village or regional level, this control is being accomplished with little alienation of local populations and at modest expense. The program demonstrates that improvement can be initiated with minimally trained agents. There remains, however, a need for staff upgrading and sustained conservation financing.

This Evaluation Highlights was prepared by Fred Sowers of the Center for Development Information and Evaluation. It summarizes the findings from USAID Working Paper "Protecting

Biological Diversity: Madagascar Case Study," by Fred Sowers, Karen McKay, Raymond Daviesson, and Lala Raharinjanahary. The study is part of a six-country assessment, directed by Phillip Church, of USAID's biological diversity protection programs. Readers can order copies of CDIE reports from the DISC, 1611 North Kent Street, Suite 200, Arlington, VA 22209-2111, telephone (703) 351-4006; fax (703) 351-4039.